When you installing AGP card, please make sure the following notice is fully understood and practiced. If your AGP card has "AGP 4X(1.5V) notch"(show below), please make sure your AGP card is AGP 4X(1.5V).



Caution: AGP 2X(3.3V) card is not supported by Intel® 845(GE/PE) / 845(E/G) / 850(E). You might experience system unable to boot up normally. Please insert an AGP 4X(1.5V) card

Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X (1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V).
The GA-8PEMT4 (or any AGP 4X only) motherboards might not function properly, if you install this card without switching the jumper to 4X(1.5) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X(3.3V)/4X(1.5V) mode AGP slot, but they support 2X(3.3V) only. The GA-8PEMT4 (or any AGP 4X only) motherboards might not function properly, If you install this card in it.

Note : Although Gigabyte's AG32S(G) graphics card is based on ATi Rage 128 Pro chip, the design of AG32S(G) is compliance with AGP 4X(1.5V) specification. Therefore, AG32S (G)will work fine with Intel®845(GE/PE) /845(E/G) / 850(E) based motherboards.

- The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.
- Third-party brands and names are the property of their respective owners.
- Please do not remove any labels on motherboard, this may void the warranty of this motherboard.
- Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

WARNING: Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!

Mise en garde : Ne faites jamais tourner le processeur sans que le dissipateur de chaleur soit fix correctement et fermement. UN DOMMAGE PERMANENT EN RÉSULTERA !

Achtung: Der Prozessor darf nur in Betrieb genommen werden, wenn der W ärmeableiter ordnungsgem ß und fest angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!

Advertencia: Nunca haga funcionar el procesador sin el disipador de calor instalado correcta y firmemente. ¡SE PRODUCIRÁ UN DAÑO PERMANENTE!

Aviso: Nunca execute o processador sem o dissipador de calor estar adequado e firmemente conectado. O RESULTADO SERÁ UM DANO PERMANENTE!

警告： 将散热板牢固地安装到处理器上之前，不要运行处理器。过热将永远损坏处理器！

警告： 將散熱板牢固地安裝到處理器上之前，不要運行處理器，過熱將永遠損壞處理器！

경고: 히트싱크를 제대로 또 단단히 부착시키지 않은 채 프로세서를 구동시키지 마십시오. 영구적 고장이 발생합니다!

警告: 永久的な損傷を防ぐため、ヒートシンクを正しくしっかりと取り付けるまでは、プロセッサを動作させないようにしてください。

Declaration of Conformity

We, Manufacturer/Importer

(full address)

G.B.T. Technology Träding GMbH
Ausschlager Weg 41,1F, 20537 Hamburg, Germany

declare that the product

(description of the apparatus, system, installation to which it refers)

Mother Board

GA-8PEMT4

is in conformity with

(reference to the specification under which conformity is declared)

in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2*** ☒ **EN 60555-2**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN 61000-3-3*** ☒ **EN 60555-3**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1** ☒ **EN 50082-1**	Generic emission standard Part 1: Residual commercial and light industry Generic immunity standard Part 1: Residual commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic emission standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN 50091-2**	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking** (EC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	Safety for information technology equipment including electrical bussiness equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirments for uninterruptible power systems (UPS)

Manufacturer/Importer

Signature: *Timmy Huang*

Name: Timmy Huang

Date: Nov. 15, 2002

(Stamp)

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number: GA-8PEMT4

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a), Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: Nov. 15,2002

GA-8PEMT4 Series

P4 Titan-DDR Motherboard

USER'S MANUAL

Pentium®4 Processor Motherboard

Rev. 1001

12ME-8PEMT4-1001

English

Table of Content

English

Item Checklist

- ☑ The GA-8PEMT4 Series motherboard
- ☑ IDE cable x 1 / Floppy cable x 1
- ☑ CD for motherboard driver & utility
- ☑ GA-8PEMT4 Series user's manual
- ☑ I/O Shield (*)
- ☑ Motherboard Settings Label

WARNING!

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX ower connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

(*) For GA-8PEMT4 only

Chapter 1 Introduction

Features Summary

Form Factor	• 22.0cm x 24.4cm Micro ATX size form factor, 4 layers PCB.
Motherboard	• GA-8PEMT4 Series Motherboard: GA-8PEMT4 and GA-8PEMT4-C
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Intel Pentium®4 533MHz/400MHz FSB • Support Intel ® Pentium ® 4 (Northwood, 0.13μm) processor • Support Intel ® Pentium ® 4 Processor with HT Technology • 2nd cache depend on CPU
Chipset	• Chipset 845PE HOST/AGP/Controller • ICH4 I/O Controller Hub
Memory	• 2 184-pin DDR DIMM sockets • Supports DDR333/DDR266 DDR DIMM • Supports up to 2GB DRAM (Max) • Supports only 2.5V DDR DIMM
I/O Control	• ITE8712
Slots	• 1 AGP slot 4X (1.5V only) device support • 3 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE controllers on the Intel ICH4 PCI chipset provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes.
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 2 Serial ports (COMA& COMB) • Support 6 USB port 2.0/1.1 (2 port rear,4 ports by cable) • 1 IrDA connector for IR/CIR • 1 MODEN connector(*) • 1 Front Audio connector

to be continued......

Due to (Intel 845PE/GE/GV) chipset architecture limitation, DDR 333 memory module is only supported when using FSB 533 Pentium 4 processor. A FSB 400 Pentium 4 processor will only support DDR 266 memory module

(*) For GA-8PEMT4 only

English

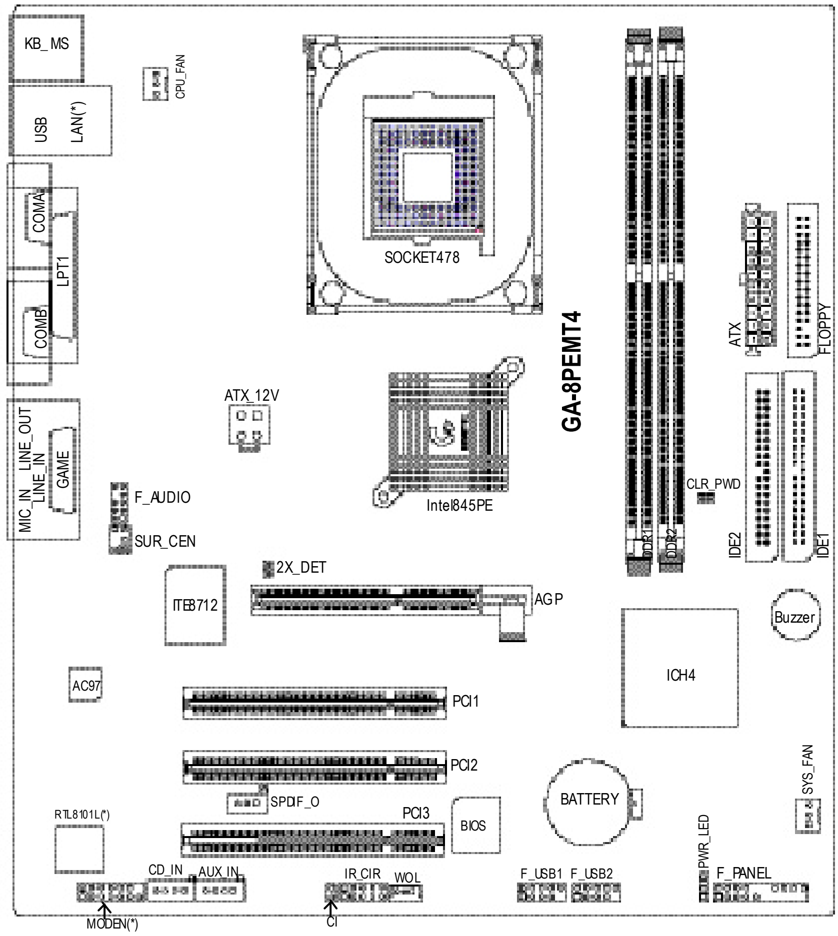
Hardware Monitor	•	CPU/System Fan Revolution detect
	•	CPU/System Fan Control
	•	CPU Overheat Warning
	•	System Voltage Detect
On-Board Sound	•	Realtek ALC650 CODEC
	•	Line Out / 2 front speaker
	•	Line In / 2 rear speaker(by s/w switch)
	•	Mic In / center& subwoofer(by s/w switch)
	•	SPDIF out
	•	1 Buzzer
	•	CD In / AUX In /Game port
On-Board LAN(*)	•	Builit in RTL8101L Chipset
	•	1 RJ 45 port
PS/2 Connector	•	PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	•	Licensed AWARD BIOS, 2M bit
	•	Supports Q-Flash
Additional Features	•	PS/2 Keyboard power on by password
	•	PS/2 Mouse power on
	•	External Modem wake up
	•	STR(Suspend-To-RAM)
	•	Wake on LAN (WOL)
	•	AC Recovery
	•	Poly fuse for keyboard over-current protection
	•	USB KB/Mouse wake up from S3
	•	Supports @BIOS
	•	Supports EasyTune 4
Overclocking	•	Over Clock (DDR/AGP/CPU/PCI) by BIOS

(*) For GA-8PEMT4 only



Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets,SDRAM,Cards….etc.

GA-8PEMT4 Series Motherboard Layout



(*) For GA-8PEMT4 only

Chapter 2 Hardware Installation Process

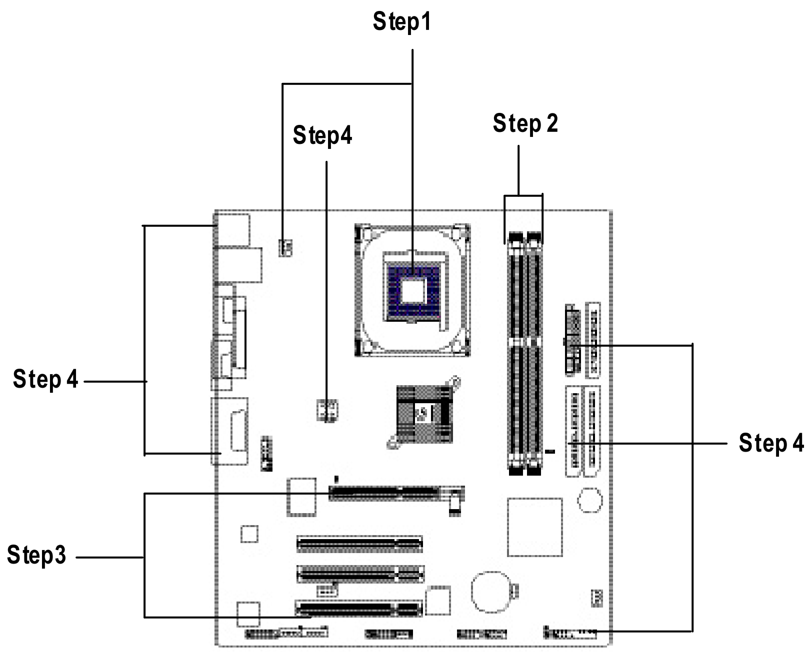
To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

Step 2- Install memory modules

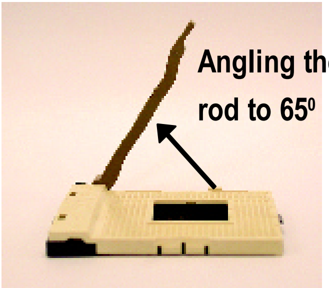
Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply

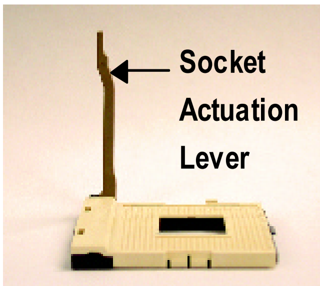


Step 1: Install the Central Processing Unit (CPU)

Step 1-1: CPU Installation



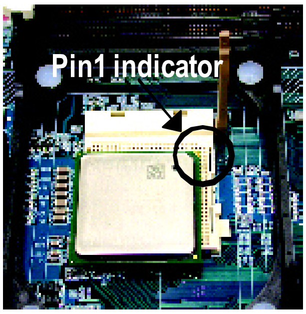
1. Angling the rod to 65-degree may be feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made.



2. Pull the rod to the 90-degree directly.



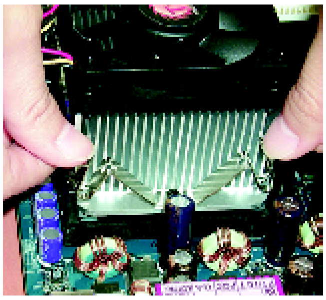
3. CPU Top View



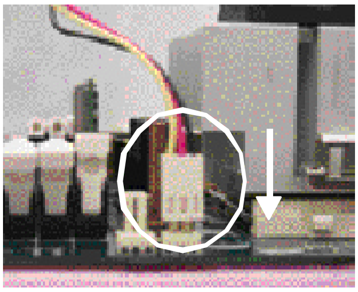
4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- **Please make sure the CPU type is supported by the motherboard.**
- **If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improperinstallation. Please change the insert orientation.**

Step 1-2 : CPU Heat Sink Installation



1. Fasten the heatsink supporting-base onto the CPU socket on the mainboard.



2. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

- **Please use Intel approved cooling fan.**
- **We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink.**
  (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)
- **Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.**
- **Please refer to CPU heat sink user's manual for more detail installation procedure.**

Step 2: Install memory modules

The motherboard has 2 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket .The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

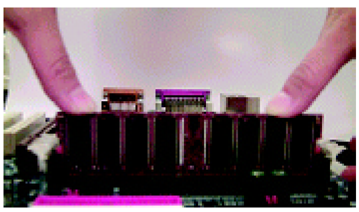
Support Unbuffered DDR DIMM Sizes type:

64 Mbit (2Mx8x4 banks)	64 Mbit (1Mx 16x4 banks)	128 Mbit(4Mx8x4 banks)
128 Mbit(2Mx16x4 banks)	256 Mbit(8Mx8x4 banks)	256 Mbit(4Mx16x4 banks)
512 Mbit(16Mx8x4 banks)	512 Mbit(8Mx16x4 banks)	
Total System Memory (Max 2GB)		

Notes: Double-sided x 16 DDR memory devices are not support by Intel 845E/G/PE/GE chipset.



DDR



1. The DIMM socket has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.
3. Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.

Please note that the DIMM module can only fit in one direction due to the two notches. Wrong orientation will cause improper installation. Please change the insert orientation.

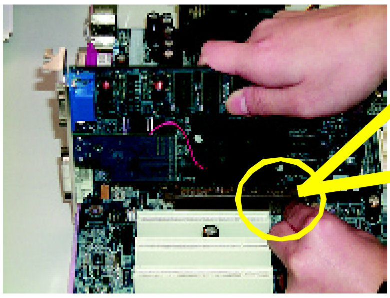
DDRIntroduction

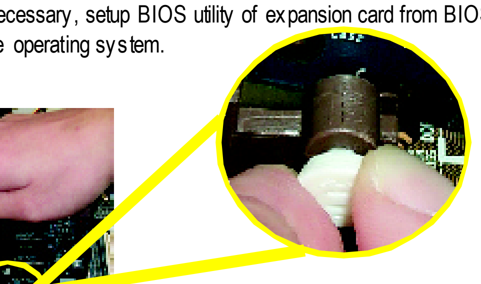
Established on the existing SDRAM industry infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs and system integrators.

DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottle-neck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.664GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

Step 3: Install expansion cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, necessary screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.





AGP Card

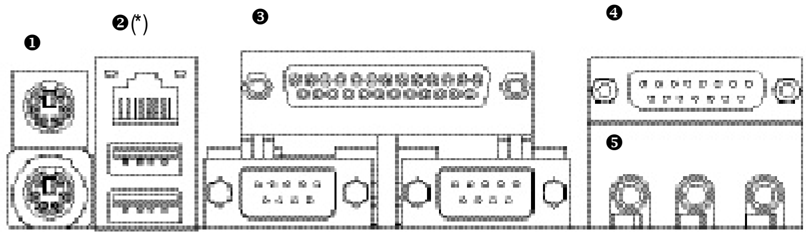
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/ Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot .Make sure your AGP card is locked by the small white- drawable bar.

When an AGP 2x (3.3V) card is installed the 2X_DET will light up, indicating a non-supported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2x (3.3V) is not supported by the chipset.

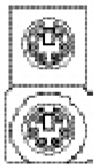
English

Step 4: Connect ribbon cables, cabinet wires, and power supply

Step4-1 : I/O Back Panel Introduction

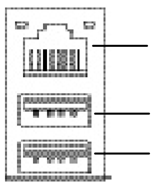


❶ PS/2 Keyboard and PS/2 Mouse Connector



➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

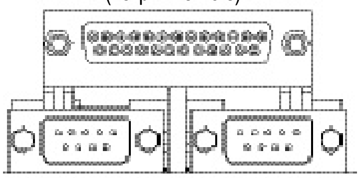
❷ USB/LANConnector



➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

(*) FOR GA-8PEMT4 only.

❸ Parallel Port ,Serial Ports (COMA,COMB)



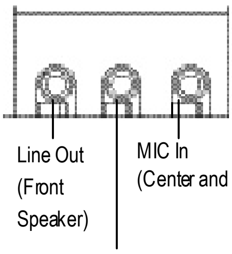
➢ This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

❹ Game /MIDI Ports



➢ This connector supports joystick, MIDI keyboard and other relate audio devices.

❺ Audio Connectors



➢ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack. Device like CD-ROM , walkman etc can be connected to Line-In jack.

Please note:

You are able to use 2-/4-/6- channel audio feature by S/W selection.

If you want to enable 6-channel function, you have 2 choose for hardware connection.

Method1:

Connect "Front Speaker" to "Line Out"

Connect "Rear Speaker" to "Line In"

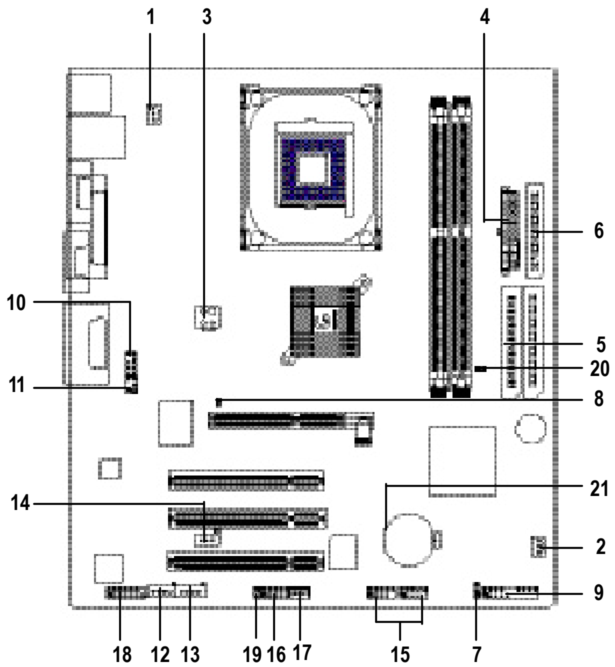
Connect "Center and Subwooferr" to "MIC Out ".

Method2:

You can refer to page 19, and contact your nearest dealer for optional SUR_CEN cable.

If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to "2-/4-/6-Channel Audio Function Introduction"

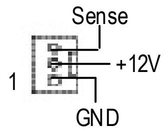
Step 4-2 :Connectors & Jumper Setting Introduction



1) CPU_FAN	12) CD_IN
2) SYS_FAN	13) AUX_IN
3) ATX_12V	14) SPDIF_O
4) ATX	15) F_USB1/F_USB2
5) IDE1/IDE2	16) IR_CIR
6) FDD	17) WOL
7) PWR_LED	18) MODEM(*)
8) 2X_DET	19) CI
9) F_PANEL	20) CLR_PWD
10) F_AUDIO	21) BAT
11) SUR_CEN	

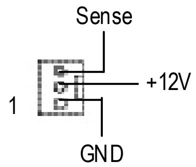
(*) For GA-8PEMT4 only

1) CPU_FAN (CPU FAN Connector)



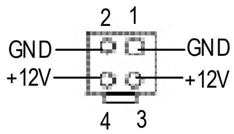
➢ Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating.The CPU fan connector supports Max. current up to 600 mA.

2) SYS_FAN (System FAN Connector)



➢ This connector allows you to link with the cooling fan on the system case to lower the system temperature.

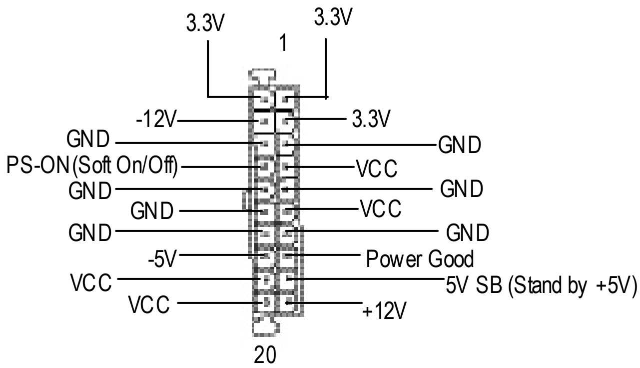
3) ATX_12V (+12V Power Connector)



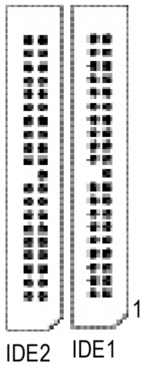
➢ This connector (ATX +12V) supplies the CPU operation voltage (Vcore).
If this " ATX+ 12V connector" is not connected, system cannot boot.

4) ATX (ATX Power)

➢ AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.



5) IDE1/ IDE2 [IDE1 /IDE2 Connector(Primary/Secondary)]



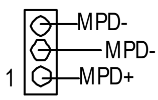
- Important Notice:
  Please connect first harddisk to IDE1 and connect CDROM to IDE2.
  The red stripe of the ribbon cable must be the same side with the Pin1.

6) FDD (Floppy Connector)



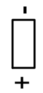
- Please connect the floppy drive ribbon cables to FDD. It supports 360K,1.2M, 720K, 1.44M and 2.88M bytes floppy disk types.
  The red stripe of the ribbon cable must be thesame side with the Pin1.

7) PWR_LED



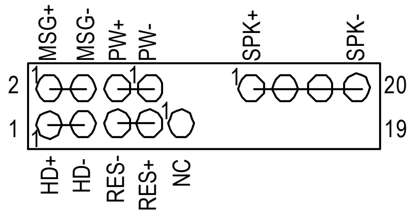
- PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.

8)2X_DET



➢ When an AGP 2X (3.3V) card is installed the 2X_DET will light up, indicating a nonsupported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2X (3.3V) is not supported by the chipset.

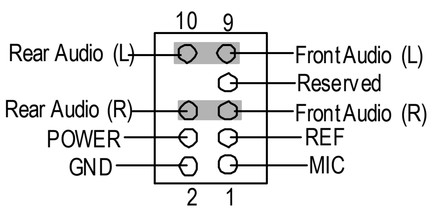
9)F_PANEL (2x10pins connector)



HD (IDE Hard Disk Active LED) (Blue)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPK (Speaker Connector) (Amber)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch) (Green)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector) (Red)	Open: Normal Operation Close: Power On/Off
MSG(Message LED/Power/ Sleep LED)(Yellow)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
NC(Purple)	NC

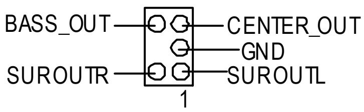
➢ Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the F_PANEL connector according to the pin assignment above.

10)F_AUDIO (Front Audio Connector)



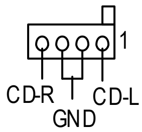
➢ If you want to use "Front Audio" connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

11)SUR_CEN



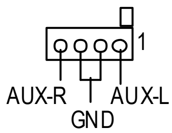
➢ Please contact your nearest dealer for optional SUR_CENcable.

12)CD_IN (CD Audio Line In)



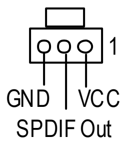
➢ Connect CD-ROM or DVD-ROM audio out to the connector.

13)AUX_IN (AUX In Connector)



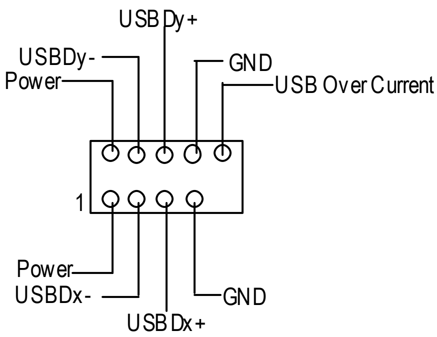
➢ Connect other device(such as PCI TV Tunner audio out)to the connector.

14)SPDIF_O



➢ The SPDIF output is capable of providing digital audio to external speakers or com pressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function.

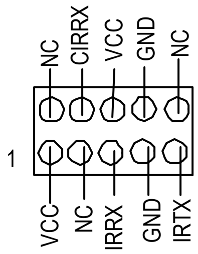
15)F_USB1/F_USB2 (F_USB1 ~ F_USB2 connector in yellow are for USB 2.0)



➢ Be careful with the polarity of the front USB connector. Check the pin assignment while you connect the front USB cable.
Please contact your nearest dealer for optional front USB cable.

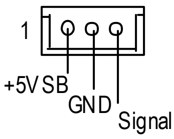
English

16)IR_CIR



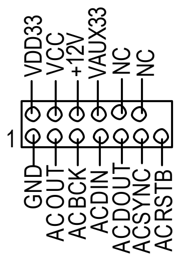
- Make sure the pin 1 on the IR device is aling with pin one the connector. To enable the IR/CIR function on the board, you are required to purchase an option IR/ CIR module. For detail information please contact your autherized Giga-Byte distributor.
  To use IR function only, please connect IR module to Pin1 to Pin5.

17)WOL (Wake On Lan)



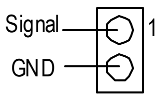
- This connector allows the remove servers to manage the system that installed this mainboard via your network adapter which also supports WOL.

18)Modem(*)



- Please contact your nearest dealer for optional Modem cable.

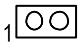
19)CI (CASE OPEN)



- This 2 pin connector allows your system to enable or disable the "Case Open" item in BIOS if the system case begin remove.

(*) For GA-8PEMT4 only

20) CLR_PWD

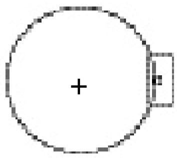

open: Clear password


close: Normal

- When Jumper set to "open", the password that set will be cleared. On the contrary when Jumper set to "close", the current status remains.

PS, the function offers a solution for users who forget the password.

22) BAT (Battery)



CAUTION

- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

English

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Powering ON the computer and pressing <Del> immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash function
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

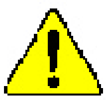
The Main Menu (For example: BIOS Ver. : F1)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

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▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Configurations	Set User Password
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu



If you can't find the setting you want, please press "Ctrl+F1" to search the advanced option widden.

- **Standard CMOS Features**

  This setup page includes all the items in standard compatible BIOS.

- **Advanced BIOS Features**

  This setup page includes all the items of Award special enhanced features.

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.
- **Power Management Setup**

  This setup page includes all the items of Green function features.
- **PnP/PCI Configurations**

  This setup page includes all the configurations of PCI & PnP ISA resources.
- **PC Health Status**

  This setup page is the System auto detect Temperature, voltage, fan, speed.
- **Frequency/Voltage Control**

  This setup page is control CPU's clock and frequency ratio.
- **Top Performance**

  If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".
- **Load Fail-Safe Defaults**

  Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.
- **Load Optimized Defaults**

  Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.
- **Set Supervisor password**

  Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **Set User password**

  Change, set, or disable password. It allows you to limit access to the system.
- **Save & Exit Setup**

  Save CMOS value settings to CMOS and exit setup.
- **Exit Without Saving**

  Abandon all CMOS value changes and exit setup.

Standard CMOS Features

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Standard CMOS Features

Date (mm:dd:yy) Mon, Feb 21 2000		Item Help
Time (hh:mm:ss) 22:31:24		Menu Level ▶
		Change the day, month,
▶IDE Primary Master	None	year
▶IDE Primary Slave	None	
▶IDE Secondary Master	None	<Week>
▶IDE Secondary Slave	None	Sun. to Sat.
Drive A	1.44M, 3.5 in.	<Month>
Drive B	None	Jan. to Dec.
Floppy 3 Mode Support	Disabled	
		<Day>
Halt On All, But Keyboard		1 to 31 (or maximum
		allowed in the month)
Base Memory 640K		
Extended Memory 130048K		<Year>
Total Memory 131072K		1999 to 2098

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 2: Standard CMOS Features

☞ Date

The date format is <week>, <month>, <day>, <year>.

- ▸▸Week The week, from Sun to Sat, determined by the BIOS and is display only
- ▸▸Month The month, Jan. Through Dec.
- ▸▸Day The day, from 1 to 31 (or the maximum allowed in the month)
- ▸▸Year The year, from 1999 through 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

►► CYLS.	Number of cylinders
►► HEADS	Number of heads
►► PRECOMP	Write precomp
►► LANDZONE	Landing zone
►► SECTORS	Number of sectors

If a hard disk has not been installed select NONE and press <Enter>.

☞ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

►► None	No floppy drive installed
►► 360K, 5.25 in.	5.25 inch PC-type standard drive; 360K byte capacity.
►► 1.2M, 5.25 in.	5.25 inch AT-type high-density drive; 1.2M byte capacity (3.5 inch when 3 Mode is Enabled).
►► 720K, 3.5 in.	3.5 inch double-sided drive; 720K byte capacity
►► 1.44M, 3.5 in.	3.5 inch double-sided drive; 1.44M byte capacity.
►► 2.88M, 3.5 in.	3.5 inch double-sided drive; 2.88M byte capacity.

☞ Floppy 3 Mode Support (for Japan Area)

▸▸Disabled	Normal Floppy Drive. (Default value)
▸▸Drive A	Drive A is 3 mode Floppy Drive.
▸▸Drive B	Drive B is 3 mode Floppy Drive.
▸▸Both	Drive A & B are 3 mode Floppy Drives.

☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

▸▸NO Errors	The system boot will not stop for any error that may be detected and you will be prompted.
▸▸All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped.
▸▸All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
▸▸All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
▸▸All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512 K for systems with 512 K memory installed on the motherboard, or 640 K for systems with 640 K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

First Boot Device	Floppy	Item Help
Second Boot Device	HDD-0	Menu Level ▶
Third Boot Device	CDROM	
Boot Up Floppy Seek	Disabled	
Password Check	Setup	
#CPU Hyper-Threading	Enabled	
Init Display First	Onboard/AGP	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3: Advanced BIOS Features

" # " System will detect automatically and show up when you install the Intel® Pentium® 4 processor with HT Technology.

☞ First / Second / Third Boot Device

▸▸Floppy	Select your boot device priority by Floppy.
▸▸LS120	Select your boot device priority by LS120.
▸▸HDD-0~3	Select your boot device priority by HDD-0~3.
▸▸SCSI	Select your boot device priority by SCSI.
▸▸CDROM	Select your boot device priority by CDROM.
▸▸ZIP	Select your boot device priority by ZIP.
▸▸USB-FDD	Select your boot device priority by USB-FDD.
▸▸USB-ZIP	Select your boot device priority by USB-ZIP.
▸▸USB-CDROM	Select your boot device priority by USB-CDROM.
▸▸USB-HDD	Select your boot device priority by USB-HDD.
▸▸LAN	Select your boot device priority by LAN.
▸▸Disabled	Select your boot device priority by Disabled.

☞ Boot Up Floppy Seek

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 K type is 40 tracks 720 K, 1.2 M and 1.44 M are all 80 tracks.

➠Enabled	BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80tracks.
➠Disabled	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K. (Default value)

☞ Password Check

Please refer to the detail on P.45

This category allows you to limit access to the system and Setup, or just to Setup.

➠System	The user must enter correct password in order to access the system and/or BIOS setup.
➠Setup	The user must enter correct password in order to access BIOS setup utility. (Default value)

☞ CPU Hyper-Threading

➠Enabled	Enables CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)
➠Disabled	Disables CPU Hyper Threading.

☞ Init Display First

➠Onboard/AGP	Set Init Display First to onboard/AGP. (Default value)
➠PCI	Set Init Display First to PCI.

Integrated Peripherals

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Integrated Peripherals

On-Chip Primary PCI IDE	Enabled	Item Help
On-Chip Secondary PCI IDE	Enabled	Menu Level ▶
IDE1 Conductor Cable	Auto	If a hard disk
IDE2 Conductor Cable	Auto	controller card is
USB Controller	Enabled	used, set at Disable
USB Keyboard Support	Disabled	
USB Mouse Support	Disabled	[Enabled]
AC97 Audio	Auto	Enable onboard IDE
Onboard H/W LAN(*)	Enabled	PORT
Onboard LAN Boot ROM(*)	Disabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
x UR2 Duplex Mode	Half	[Disabled]
Onboard Parallel Port	378/IRQ7	Disable onboard IDE
Parallel Port Mode	SPP	PORT
x ECP Mode Use DMA	3	
Game Port Address	201	
Midi Port Address	330	
Midi Port IRQ	10	
CIR Port Address	Disabled	
x CIR Port IRQ	11	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 4: Integrated Peripherals

☞ On-Chip Primary PCI IDE

- ▶▶Enabled Enable onboard 1st channel IDE port. (Default value)
- ▶▶Disabled Disable onboard 1st channel IDE port.

☞ On-Chip Secondary PCI IDE

- ▶▶Enabled Enable onboard 2nd channel IDE port. (Default value)
- ▶▶Disabled Disable onboard 2nd channel IDE port.

(*) For GA-8PEMT4 only

☞ IDE1 Conductor Cable

▸▸Auto	Will be automatically detected by BIOS. (Default Value)
▸▸ATA66/100	Set IDE1 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100).
▸▸ATA33	Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ IDE2 Conductor Cable

▸▸Auto	Will be automatically detected by BIOS. (Default Value)
▸▸ATA66/100	Set IDE2 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100).
▸▸ATA33	Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ USB Controller

▸▸Enabled	Enable USB Controller. (Default value)
▸▸Disabled	Disable USB Controller.

☞ USB Keyboard Support

▸▸Enabled	Enable USB Keyboard Support.
▸▸Disabled	Disable USB Keyboard Support. (Default value)

☞ USB Mouse Support

▸▸Enabled	Enable USB Mouse Support.
▸▸Disabled	Disable USB Mouse Support. (Default value)

☞ AC97 Audio

▸▸Auto	Enable onboard AC'97 audio function. (Default Value)
▸▸Disabled	Disable this function.

☞ Onboard H/W LAN (*)

▸▸Enabled	Enabled Onboard LAN function. (Default value)
▸▸Disabled	Disabled onboard LAN function.

☞ Onboard LAN Boot ROM (*)

▸▸Enabled	Enabled Onboard LAN Boot ROM function.
▸▸Disabled	Disabled onboard LAN Boot ROM function.(Default value)

☞ Onboard Serial Port 1

- ➨Auto — BIOS will automatically setup the port 1 address.
- ➨3F8/IRQ4 — Enable onboard Serial port 1 and address is 3F8. (Default value)
- ➨2F8/IRQ3 — Enable onboard Serial port 1 and address is 2F8.
- ➨3E8/IRQ4 — Enable onboard Serial port 1 and address is 3E8.
- ➨2E8/IRQ3 — Enable onboard Serial port 1 and address is 2E8.
- ➨Disabled — Disable onboard Serial port 1.

☞ Onboard Serial Port 2

- ➨Auto — BIOS will automatically setup the port 2 address.
- ➨3F8/IRQ4 — Enable onboard Serial port 2 and address is 3F8.
- ➨2F8/IRQ3 — Enable onboard Serial port 2 and address is 2F8. (Default value)
- ➨3E8/IRQ4 — Enable onboard Serial port 2 and address is 3E8.
- ➨2E8/IRQ3 — Enable onboard Serial port 2 and address is 2E8.
- ➨Disabled — Disable onboard Serial port 2.

☞ UART Mode Select

(This item allows you to determine which Infra Red(IR) function of Onboard I/O chip)

- ➨ASKIR — Set onboard I/O chip UART to ASKIR Mode.
- ➨IrDA — Set onboard I/O chip UART to IrDA Mode.
- ➨Normal — Set onboard I/O chip UART to Normal Mode. (Default Value)

☞ UR2 Duplex Mode

- ➨Half — IR Function Duplex Half. (Default Value)
- ➨Full — IR Function Duplex Full.

☞ Onboard Parallel port

- ➨378/IRQ7 — Enable onboard LPT port and address is 378/IRQ7. (Default Value)
- ➨278/IRQ5 — Enable onboard LPT port and address is 278/IRQ5.
- ➨Disabled — Disable onboard LPT port.
- ➨3BC/IRQ7 — Enable onboard LPT port and address is 3BC/IRQ7.

☞ Parallel Port Mode

- ➨SPP — Using Parallel port as Standard Parallel Port. (Default Value)
- ➨EPP — Using Parallel port as Enhanced Parallel Port.
- ➨ECP — Using Parallel port as Extended Capabilities Port.
- ➨ECP+EPP — Using Parallel port as ECP & EPP mode.

English

☞ **ECP Mode Use DMA**

➧3	Set ECP Mode Use DMA to 3. (Default Value)
➧1	Set ECP Mode Use DMA to 1.

☞ **Game Port Address**

➧201	Set Game Port Address to 201. (Default Value)
➧209	Set Game Port Address to 209.
➧Disabled	Disable this function.

☞ **Midi Port Address**

➧300	Set Midi Port Address to 300.
➧330	Set Midi Port Address to 330.(Default Value)
➧Disabled	Disable this function.

☞ **Midi Port IRQ**

➧5	Set Midi Port IRQ to 5.
➧10	Set Midi Port IRQ to 10. (Default Value)

☞ **CIR Port Address**

This feature allows you to select CIR port address or disable it.

➧Disabled	Disabled this function. (Default Value)
➧310	Enabled CIR and Address is 310.
➧320	Enabled CIR and Address is 320.

☞ **CIR Port IRQ (When Parallel Port Mode is set [ECP or ECP+EPP])**

This feature allows you to select CIR IRQ , if CIR is enabled.

➧5	CIR use IRQ 5.
➧11	CIR use IRQ 11. (Default Value)

Power Management Setup

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Power Management Setup

ACPI Suspend Type	S1(POS)	Item Help
Soft-Off by PWR_BTTN	Instant-Off	Menu Level ▶
PME Event Wake Up	Enabled	[S1]
ModemRingOn/WakeOnLan	Enabled	
Resume by Alarm	Disabled	Set suspend type to
x Date (of Month) Alarm	Everyday	Power On Suspend under
x Time (hh:nn:ss) Alarm	0 0 0	ACPI OS
Power On By Mouse	Disabled	
Power On By Keyboard	Disabled	[S3]
x KB Power ON Password	Enter	Set suspend type to
AC Back Function	Soft-Off	Suspend to RAM under
		ACPI OS

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 5: Power Management Setup

☞ ACPI Suspend Type

This option will not be shown or not be available if you are using a CPU with the locked ratio.

- ⏩S1(POS) Set ACPI suspend type to S1. (Default Value)
- ⏩S3(STR) Set ACPI suspend type to S3.

☞ Soft-off by PWR_BTTN

- ⏩Instant-off Press power button then Power off instantly. (Default value)
- ⏩Delay 4 Sec. Press power button 4 sec to Power off. Enter suspend if button is pressed less than 4 sec.

☞ PME Event Wake Up

- ⏩Disabled Disable this function.
- ⏩Enabled Enable PME Event Wake up. (Default Value)

☞Modem Ring On/ WakeOnLAN (When AC Back Function is set to [Soft-Off])

- You can enable wake on LAN feature by the "ModemRingOn/WakeOnLAN" or "PME Event Wake up" when the M/B has "WOL" onboard connector. Only enabled the feature by "PME Event Wake up".
- An incoming call via modem awakes the system from its soft-off mode.
- When set at Enabled, an input signal comes from the other client/server on the LAN awaks the system from a soft off state if connected over LAN.

▸▸Disabled	Disabled Modem Ring On / Wake On LAN function.
▸▸Enabled	Enabled Modem Ring On / Wake On L

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Data/time to power on system.

▸▸Disabled	Disable this function. (Default Value)
▸▸Enabled	Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

Date (of Month) Alarm :	Everyday, 1~31
Time (hh: mm: ss) Alarm :	(0~23) : (0~59) : (0~59)

☞ Power On By Mouse

▸▸Disabled	Disabled this function. (Default value)
▸▸Mouse Click	Double click on PS/2 mouse left button.

☞ Power On By Keyboard

▸▸Password	Enter from 1 to 5 characters to set the Keyboard Power On Password.
▸▸Disabled	Disabled this function. (Default value)
▸▸Keyboard 98	If your keyboard have "POWER Key" button, you can press the key to power on your system.

☞KB Power ON Password

▸▸Enter	Input password (from 1 to 5 characters) and press Enter to set the Key board Power On Password.

☞AC Back Function

▸▸Memory	System power on depends on the status before AC lost.
▸▸Soft-Off	Always in Off state when AC back. (Default value)
▸▸Full-On	Always power on the system when AC back.

PnP/PCI Configurations

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PnP/PCI Configurations

PCI 1 IRQ Assignment	Auto	Item Help
PCI 2 IRQ Assignment	Auto	Menu Level ▶
PCI 3 IRQ Assignment	Auto	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 6: PnP/PCI Configurations

☞ PCI 1 IRQ Assignment

▸▸Auto	Auto assign IRQ to PCI 1. (Default value)
▸▸3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1.

☞ PCI 2 IRQ Assignment

▸▸Auto	Auto assign IRQ to PCI 2. (Default value)
▸▸3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

☞ PCI 3 IRQ Assignment

▸▸Auto	Auto assign IRQ to PCI 3. (Default value)
▸▸3,4,5,7,9,10,11,12,14,15	Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

PC Health Status

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PC Health Status

Reset Case Open Status	Disabled	Item Help
Case Opened	No	Menu Level ▶
VCORE	1.744V	
+1.5V	1.488V	
+3.3V	3.312V	
+5V	5.053V	
+12V	11.840V	
Current CPU Temperature	22°C	
Current CPU FAN Speed	6490 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	Disabled	
CPU FAN Fail Warning	Disabled	
SYSTEM FAN Fail Warning	Disabled	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 7: PC Health Status

☞Reset Case Open Status

☞Case Opened

If the case is closed, "Case Opened" will show "No".

If the case have been opened, "Case Opened" will show "Yes".

If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.

Disabled : Don't reset case open status.;Enabled : Clear case open status at next boot.

☞ Current Voltage (V) VCORE / 1.5V /+3.3V / +5V / +12V

▸▸Detect system's voltage status automatically.

☞ Current CPU Temperature

- Detect CPU Temp. automatically.

☞ Current CPU/SYSTEM FAN Speed (RPM)

- Detect CPU/SYSTEM Fan speed status automatically.

☞ CPU Warning Temperature

▸▸60°C / 140°F	Monitor CPU Temp. at 60°C / 140°F.
▸▸70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F.
▸▸80°C / 176°F	Monitor CPU Temp. at 80°C / 176°F.
▸▸90°C / 194°F	Monitor CPU Temp. at 90°C / 194°F.
▸▸Disabled	Don't monitor current temperature.(Default value)

☞ CPU FAN Fail Warning

▸▸Disabled	Fan Warning Function Disable. (Default value)
▸▸Enabled	Fan Warning Function Enable.

☞ SYSTEM FAN Fail Warning

▸▸Disabled	Fan Warning Function Disable. (Default value)
▸▸Enabled	Fan Warning Function Enable.

English

Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock Ratio	15X	Item Help
CPU Host Clock Control	Disabled	Menu Level ▶
x CPU Host Frequency (Mhz)	100	
x PCI/AGP Divider	Disabled	
Host/DRAM Clock ratio	Auto	
Memory Frequency (Mhz)	266	
PCI/AGP Frequency (Mhz)	33/66	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 7: Frequency/Voltage Control

☞ CPU Clock Ratio

This setup option will automatically assign by CPU detection.

For Willamette CPU:

8X~23X default: 14X

For C-Stepping P4:

8X,10X~24X default: 15X

For Northwood CPU:

12X~24X default: 16X

The option will display "Locked" and read only if the CPU ratio is not changeable.

☞ CPU Host Clock Control

Note: If system hangs up before enter CMOS setup utility, wait for 20 sec for times out reboot. When time out occur, system will reset and run at CPU default Host clock at next boot.

▸▸Disable	Disable CPU Host Clock Control.(Default value)
▸▸Enable	Enable CPU Host Clock Control.

☞ CPU Host Frequency

▸▸100MHz ~ 355MHz Set CPU Host Clock from 100MHz to 355MHz.

☞ PCI/AGP Divider

▸▸You can choose Disabled,PLL/40,PLL/32,PLL/24,PLL/20/PLL/16 mode to adjust PCI/AGP frequency.

☞ Host/DRAM Clock Ratio

for FSB(Front Side Bus) frequency=400MHz,

▸▸2.0 Memory Frequency = Host clock X 2.0.

▸▸2.66 Memory Frequency = Host clock X 2.66.

▸▸Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=533MHz,

▸▸2.0 Memory Frequency = Host clock X 2.0.

▸▸2.5 Memory Frequency = Host clock X 2.5.

▸▸Auto Set Memory frequency by DRAM SPD data. (Default value)

☞ Memory Frequency(MHz)

▸▸The values depend on CPU Host Frequency(Mhz) .

☞ PCI/AGP Frequency(MHz)

▸▸Setup PCI/AGP frequency by adjusting CPU Host Frequency or PCI/AGP Divider item.

Top Performance

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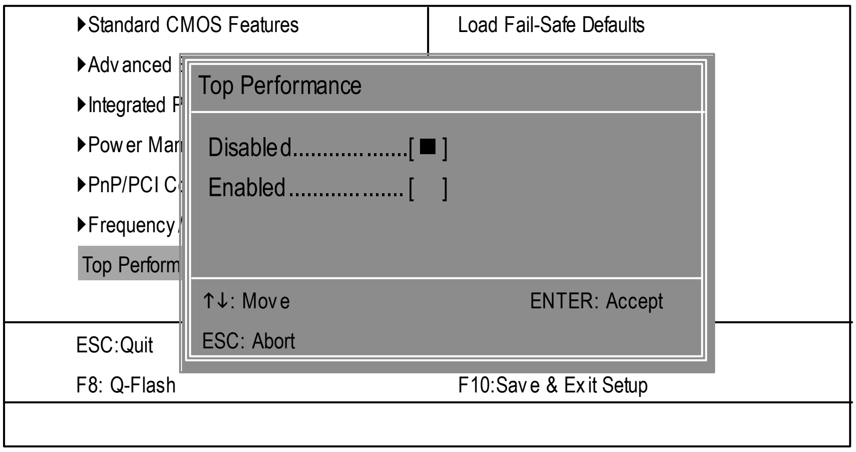


Figure 8: Top Performance

Top Performance

If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

- ▶▶Disabled   Disable this function. (Default Value)
- ▶▶Enabled   Enable Top Performance function.

⚠ You must check whether your RAM&CPU support over clock when you set "Top Performance" to " Enabled"

Load Fail-Safe Defaults

CMOS Setup Utility-Copy right (C) 1984-2002 Aw ard Softw are

▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Pow er Ma	Load Fail-Safe Defaults? (Y/N)?Y
▶PnP/PCI C	
▶PC Health Status	Sav e & Ex it Setup
▶Frequency /Voltage Control	Ex it Without Sav ing
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Sav e & Ex it Setup
Load Fail-Safe Defaults	

Figure 10: Load Fail-Safe Defaults

Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate v alues of the sy stem parameters that allow minimum sy stem performance.

English

Load Optimized Defaults

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power M	
▶PnP/PCI	
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Load Optimized Defaults	

Load Optimized Defaults? (Y/N)?Y

Figure 11: Load Optimized Defaults

Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Set Supervisor/User Password

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▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Ma	Enter Password:
▶PnP/PCI C	
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Change/Set/Disable Password	

Figure 12: Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

Save & Exit Setup

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI C	
▶PC Health	
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Save Data to CMOS	

Save to CMOS and EXIT (Y/N)? Y

Figure 13: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.

Type "N" will return to Setup Utility.

English

Exit Without Saving

CMOS Setup Utility-Copy right (C) 1984-2002 Aw ard Softw are

▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Pow er Management Setup	Set Superv isor Passw ord
▶PnP/PCI Co	
▶PC Health S	
▶Frequency /Voltage Control	Ex it Without Sav ing
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Sav e & Ex it Setup
Abandon all Data	

Quit Without Saving (Y/N)? N

Figure 14: Ex it Without Sav ing

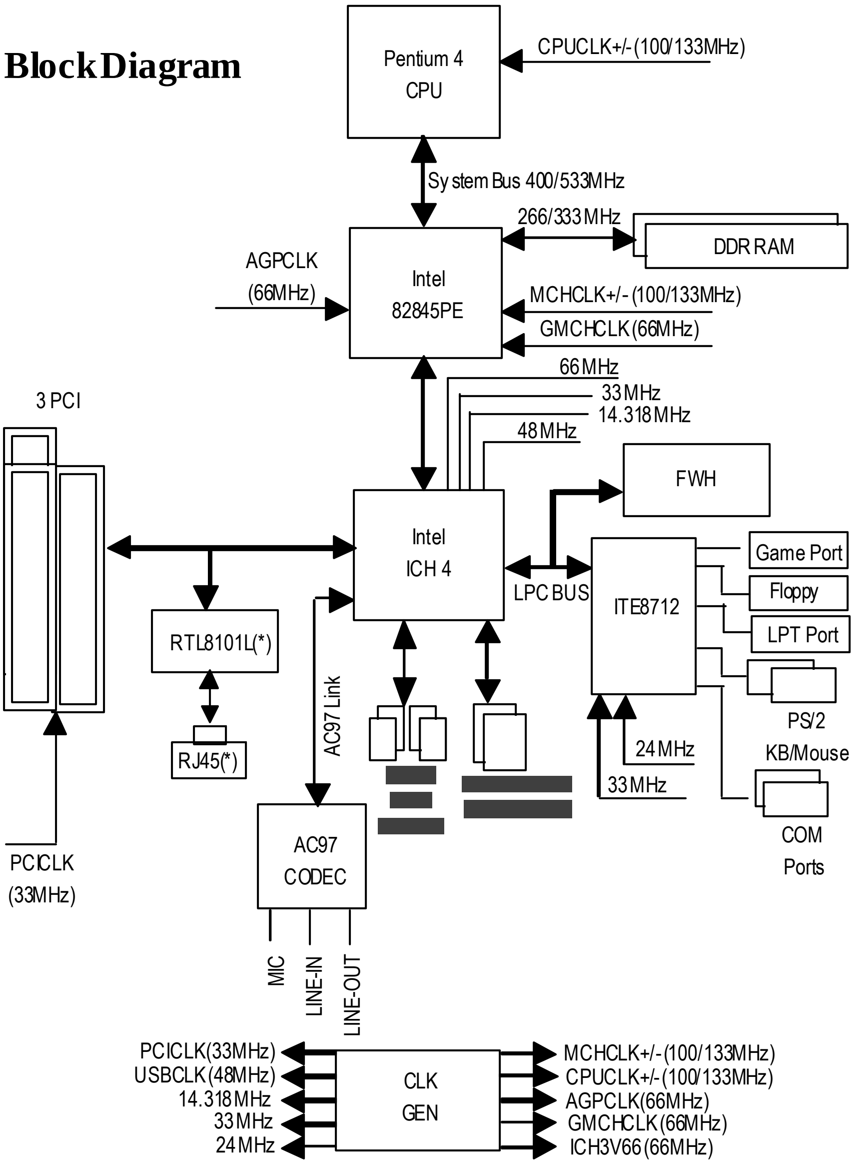
Ty pe “Y” will quit the Setup Utility without sav ing to RTC CMOS.

Ty pe “N” will return to Setup Utility.

English

Chapter 4 Technical Reference

Block Diagram



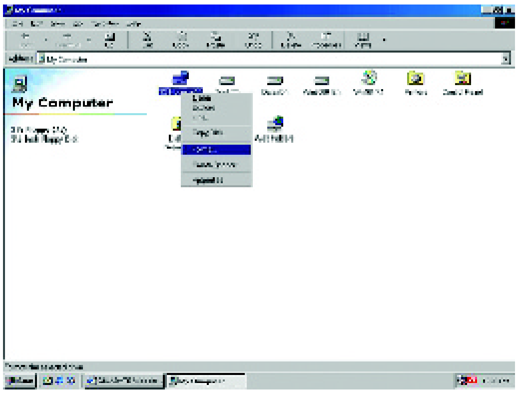
(*) For GA-8PEMT4 only

BIOS Flash Procedure

Method 1:

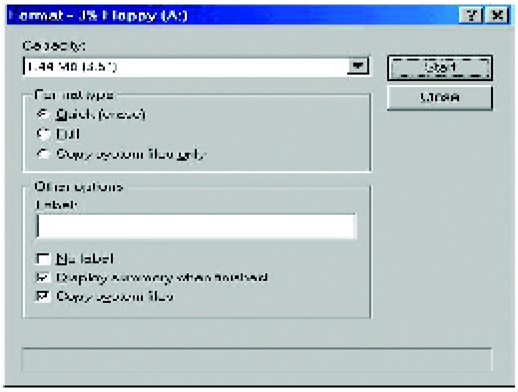
We use GA-7VTX motherboard and Flash841 BIOS flash utility as example.
Please flash the BIOS according to the following procedures if you are now under the DOS mode.
Flash BIOS Procedure:
STEP 1:
(1) Please make sure your system has installed the extraction utility such as winzip or pkunzip.
Firstly you have to install the extraction utility such as winzip or pkunzip for unzip the files.
Both of these utilities are available on many shareware download pages like
http://www.cnet.com

STEP 2: Make a DOS boot diskette. (See example: Windows 98 O.S.)
Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.
(1) With an available floppy disk in the floppy drive. Please leave the diskette "UN-write protected" type. Double click the "My Computer" icon from Desktop, then click "3.5 diskette (A)" and right click to select "Format (M)"

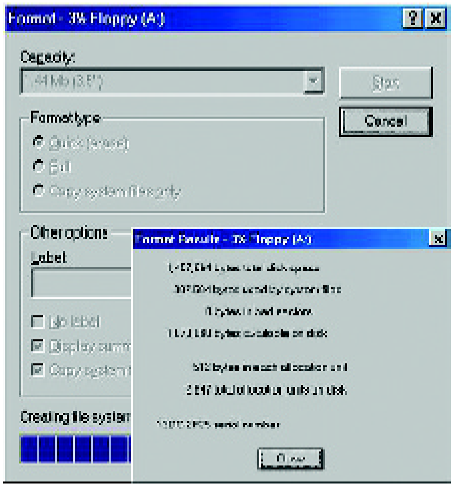


(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.

Beware: This procedure will erase all the prior data on that floppy, so please proceed accordingly.



(3) After the floppy has been formatted completely, please press "Close".

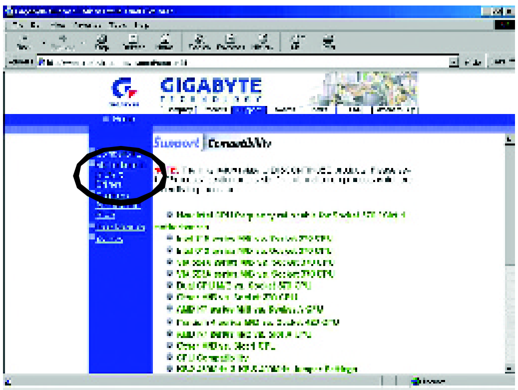


STEP 3: Download BIOS and BIOS utility program.

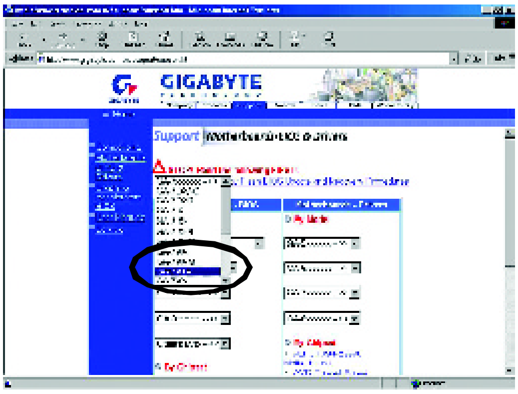
(1) Please go to Gigabyte website http://www.gigabyte.com.tw/index.html, and click "Support".



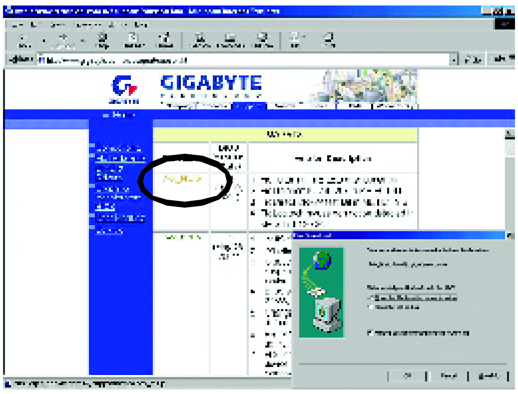
(2) From Support zone, click the "Motherboards BIOS & Drivers".



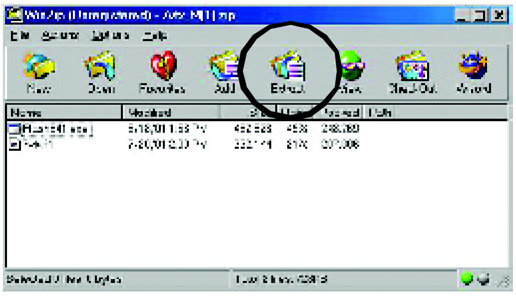
(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.



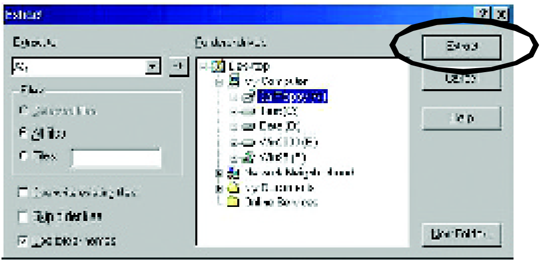
(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".



(5) At this time the screen shows the following picture, please click "Extract" button to unzip the files.



(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".



STEP 4: Make sure the system will boot from the floppy disk.

(1) Insert the floppy disk (contains bootable program and unzip file) into the floppy drive A. Then, restart the system. The system will boot from the floppy disk. Please press <DEL> key to enter BIOS setup main menu when system is boot up.



(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b

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STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values

F6: Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit

Time, Date , Hard Disk Type…

(3) Press "Enter" to enter "BIOS FEATURES SETUP" menu. Use the arrows to highlight the item "1st Boot Device", and then use the "Page Up" or "Page Down" keys to select "Floppy".

AMIBIOS SETUP - BIOS FEATURES SETUP

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1st Boot Device	:Floppy	
2nd Boot Device	: IDE-0	
3rd Boot Device	: CDROM	
S.M.A.R.T. for Hard Disks	: Disabled	
BootUp Num-Lock	: On	ESC: Quit ↑↓←→: Select Item
Floppy Drive Seek	: Disabled	F1 : Help PU/PD/+/-: Modify
PasswordCheck	: Setup	F5 : Old Values (Shift)F2: Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

(4) Press "ESC" to go back to previous screen. Use the arrows to highlight the item "SAVE & EXIT SETUP" then press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b

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STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIG	
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

Save to CMOS and EXIT (Y/N)? Y

ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values

F6: Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit

Save Data to CMOS & Exit SETUP

STEP 5: BIOS flashing.

(1) After the system boot from floppy disk, type "A:\> dir/w" and press "Enter" to check the entire files in floppy A. Then type the "BIOS flash utility" and "BIOS file" after A:\>. In this case you have to type "A:\> Flash841 7VTX.F4" and then press "Enter".

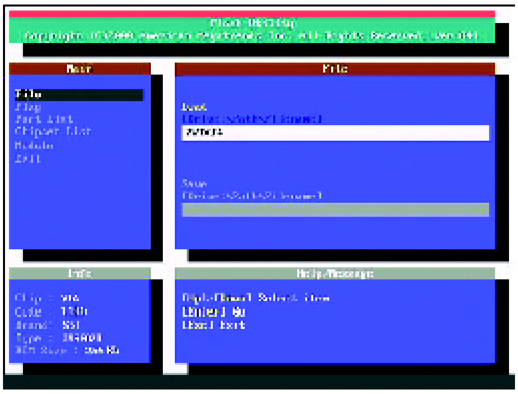
```
Starting Windows 98...

Microsoft(R) Windows98
   © Copyright Microsoft Corp 1981-1999

A:\> dir/w
   Volume in drive A has no label
Volume Serial Number is 16EB-353D
Directory of A:\
COMMAND.COM    7VTX.F4    FLASH841.EXE
          3 file(s)      838,954  bytes
          0 dir(s)       324,608  bytes free

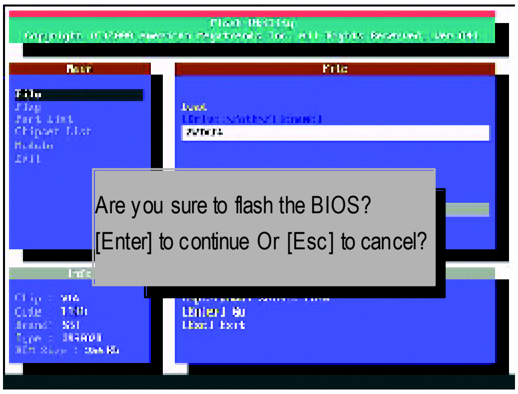
A:\> Flash841 7VTX.F4
```

(2) Now screen appears the following Flash Utility main menu. Press "Enter", the highlighted item will locate on the model name of the right-upper screen. Right after that, press "Enter" to start BIOS Flash Utility.

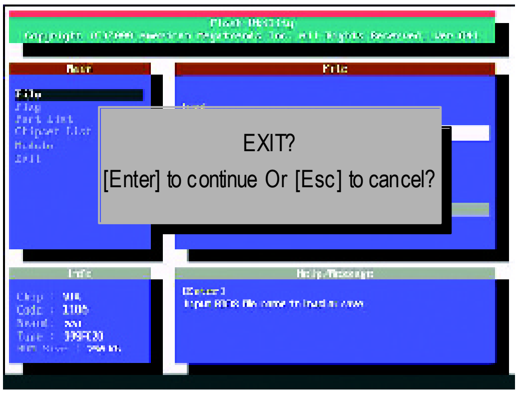


English

(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue the procedure, or press [ESC] to quit.
Beware: Please do not turn off the system while you are upgrading BIOS. It will render your BIOS corrupted and system totally inoperative.



(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.



STEP 6: Load BIOS defaults.

Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded. This important step resets everything after the flash.

(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.



(2) Don't forget to press <DEL> key to enter BIOS setup again when system is boot up. Use the arrows to highlight the item "LOAD SETUP DEFAULTS" then press "Enter". System will ask "Load Setup Defaults (Y/N)?" Press "Y" and "Enter" keys to confirm.

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STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGE	
PNP / PCI CONFIG	
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

Load Setup Defaults? (Y/N)?N

ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values
F6: Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit

Load Setup Defaults

(3) Use the arrows to highlight the item "SAVE & EXIT SETUP" and press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.

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STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIG	
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING

Save to CMOS and EXIT (Y/N)? Y

ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values
F6: Load BIOS Defaults F7: Load Setup Defaults F10: Save & Exit

Save Data to CMOS & Exit SETUP

(4) Congratulate you have accomplished the BIOS flash procedure.

English

Method 2:

Q-Flash Introduction

A. What is Q-Flash Utility?

Q-Flash utility is a pre-O.S. BIOS flash utility enables users to update its BIOS within BIOS mode, no more fooling around any OS.

B. How to use Q-Flash?

a. After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter AWARD BIOS CMOS SETUP, then press <F8> to enter Q-Flash utility.

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power	
▶PnP/P	
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8:Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

Enter Q-Flash Utility (Y/N)? Y

b. Q-Flash Utility

Q-Flash Utility V3.05		
Flash Type/Size :	SST 39SF020 / 256K	
Keep DMI Data :	Yes	
	Load BIOS from Floppy	
	Save BIOS to Floppy	
	Space Bar:Change Value	
Enter: Run	ESC: Reset	↑/↓: Select Item

Load BIOS From Floppy

✐In the A:drive, insert the "BIOS" diskette, then Press Enter to Run.

1 File(s) found

▶ XXXX.XX 256K

Total Size: 1.39M Free Size: 1.14M

F5: Refresh DEL: Delete ESC: Return Main

Where XXXX.XX is name of the BIOS file.

✐Press Enter to Run.

Are you sure to update BIOS?
[Enter] to contiune Or [ESC] ot abort...

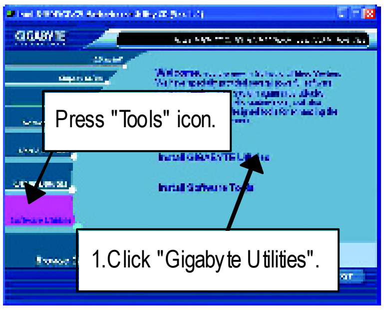
✐Press Enter to Run.

!! COPY BIOS Completed-Pass !!
Please press any key to continue

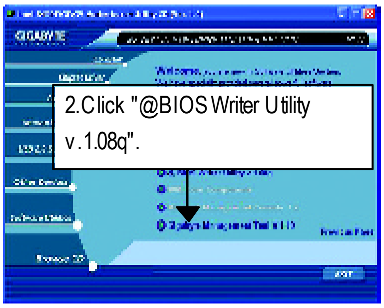
Congratulation! You have completed the flashed and now can restart system.

Method 3:

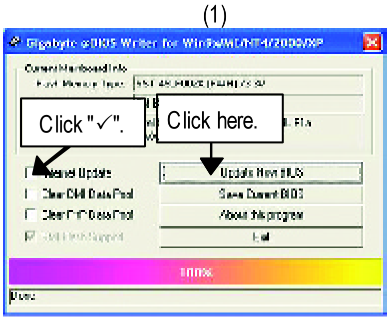
If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ program to flash BIOS.



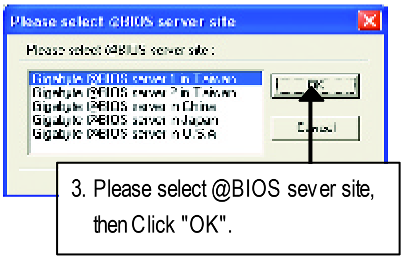
(1)



(2)



(3)



(4)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon

b. Click "Update New BIOS" icon

c. Select @BIOS™ sever

d. Select the exact model name on your motherboard

e. System will automatically download and update the BIOS.

English

II. Update BIOS NOT through Internet:

a. Do not click "Internet Update" icon
b. Click "Update New BIOS"
c. Please select "All Files" in dialog box while opening the old file.
d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8PEMT4.F1).
e. Complete update process following the instruction.

III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

Note:

a. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
b. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
c. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.
d. Please note that any interruption during updating will cause system unbooted

@ BIOS Introduction

Gigabyte announces @BIOS
Windows BIOS live update utility

Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always hesitate to update it? Because you think updating newest BIOS is unnecessary and actually you don't know how to update it.

Maybe not like others, you are very experienced in BIOS updating and spend quite a lot of time to do it. But of course you don't like to do it too much. First, download different BIOS from website and then switch the operating system to DOS mode. Secondly, use different flash utility to update BIOS. The above process is not a interesting job. Besides, always be carefully to store the BIOS source code correctly in your disks as if you update the wrong BIOS, it will be a nightmare.

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS—the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internetand update it. Not like the other BIOS update software, it's a Windows utility. With the help of "@BIOS', BIOS updating is no more than a click.

Besides, no matter which mainboard you are using, if it's a Gigabyte's product*, @BIOS help you to maintain the BIOS. This utility could detect your correct mainboard model and help you to choose the BIOS accordingly. It then downloads the BIOS from the nearest Gigabyte ftp site automatically. There are several different choices; you could use "Internet Update" to download and update your BIOS directly. Or you may want to keep a backup for your current BIOS, just choose "Save Current BIOS" to save it first. You make a wise choice to use Gigabyte, and @BIOS update your BIOS smartly. You are now worry free from updating wrong BIOS, and capable to maintain and manage your BIOS easily. Again, Gigabyte's innovative product erects a milestone in mainboard industries.

For such a wonderful software, how much it costs? Impossible! It's free! Now, if you buy a Gigabyte's motherboard, you could find this amazing software in the attached driver CD. But please remember, connected to internet at first, then you could have a internet BIOS update from your Gigabyte @BIOS.

Easy Tune™ 4 Introduction

Gigabyte announces *EasyTune™ 4* Windows based Overclocking utility

EasyTune 4 carries on the heritage so as to pave the way for future generations.

Overclock" might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "Overclock" is thought to be very difficult and includes a lot of technical know-how, sometimes "Overclock" is even considered as special skills found only in some enthusiasts. But as to the experts in "Overclock", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware or BIOS tools to do "Overclock". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "Overclock" system is unknown. Now everything is different because of a Windows based overclocking utility "EasyTune 4" --announced by Gigabyte. This windows based utility has totally changed the gaming rule of "Overclock". This is the first windows based overclocking utility is suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" for overclocking at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have autoed and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If users prefer "Overclock" by them, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class Overclocking user interface. "Advanced Mode", allows users to change the system bus / AGP / Memory working frequency in small increments to get ultimate system performance. It operates in coordination with Gigabyte motherboards. Besides, it is different from other traditional overclocking methods, EasyTune 4 doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "Overclock" at easy step. Therefore, this is a safer way for "Overclock" as nothing is changed on software or hardware. If user runs EasyTune 4 over system's limitation, the biggest lost is only to restart the computer again and the side effect is then well controlled. Moreover, if one well-performed system speed has been tested in EasyTune 4, user can "Save" this setting and "Load" it in next time. Obviously, Gigabyte EasyTune 4 has already turned the "Overclock" technology toward to a newer generation. This wonderful software is now free bundled in Gigabyte motherboard attached in driver CD. Users may make a test drive of "Easy Tune 4" to find out more amazing features by themselves.



*Some Gigabyte products are not fully supported by Easy Tune 4. Please find the products supported list in the web site.

*Any "Overclocking action" is at user's risk, Gigabyte Technology will not be responsible for any damage or instability to your processor, motherboard, or any other components.

2-/4-/6-Channel Audio Function

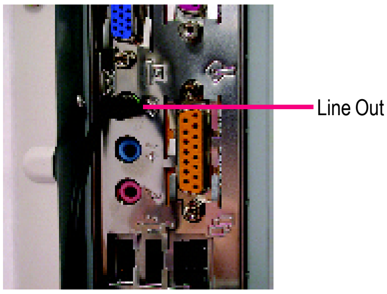
The installation of windows 98SE/2K/ME/XP is very simple. Please follow next step to install the function!

Stereo Speakers Connection and Settings:

We recommend that you use the speaker with amplifier to acquire the best sound effect if the stereo output is applied.

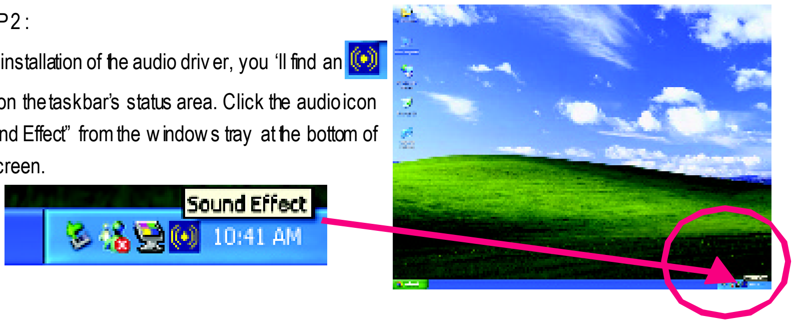
STEP 1:

Connect the stereo speakers or earphone to "Line Out".



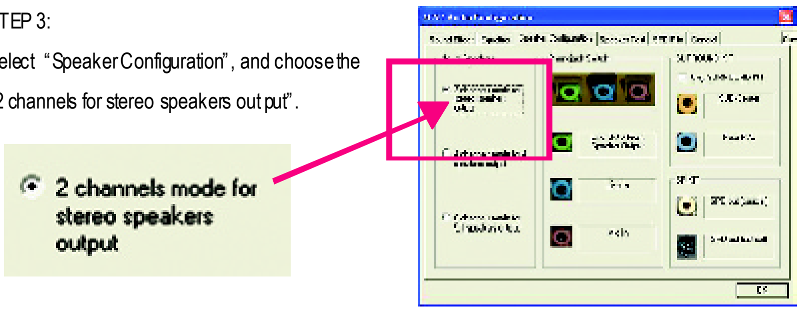
STEP 2:

After installation of the audio driver, you 'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.



STEP 3:

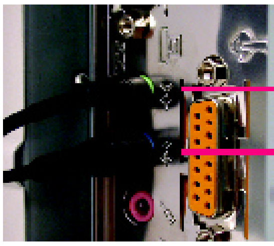
Select "Speaker Configuration", and choose the "2 channels for stereo speakers output".



4 Channel Analog Audio Output Mode

STEP 1 :

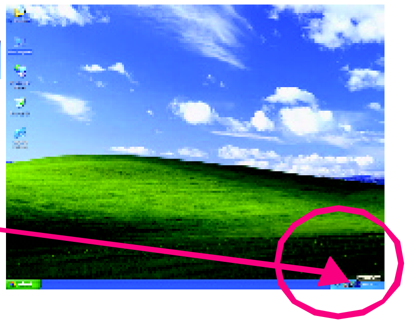
Connect the front channels to "Line Out", the rear channels to "Line In".



STEP2 :

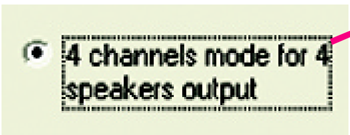
After installation of the audio driver, you 'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

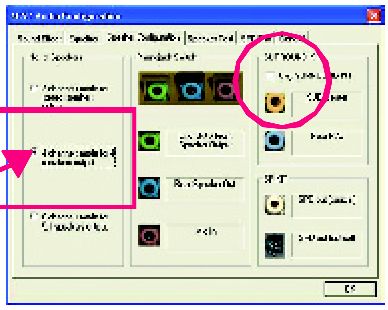




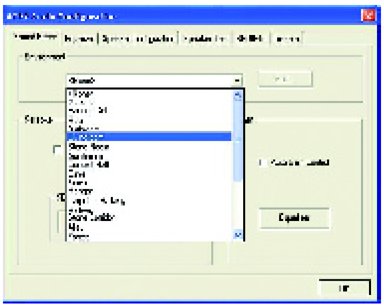
STEP3 :

Select "Speaker Configuration", and choose the "4 channels for 4 speakers output".
Disable "Only SURROUND-KIT", and press "OK".





When the "Environment settings" is "None", the sound would be performed as stereo mode (2 channels output). Please select the other settings for 4 channels output.

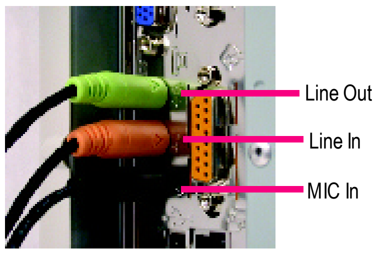


Basic 6 Channel Analog Audio Output Mode

Use the back audio panel to connect the audio output without any additional module.

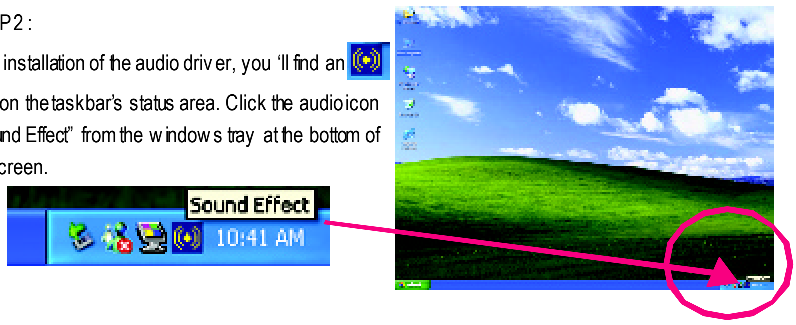
STEP 1 :

Connect the front channels to "Line Out", the rear channels to "Line In", and the Center/Subwoofer channels to "MIC In ".



STEP 2 :

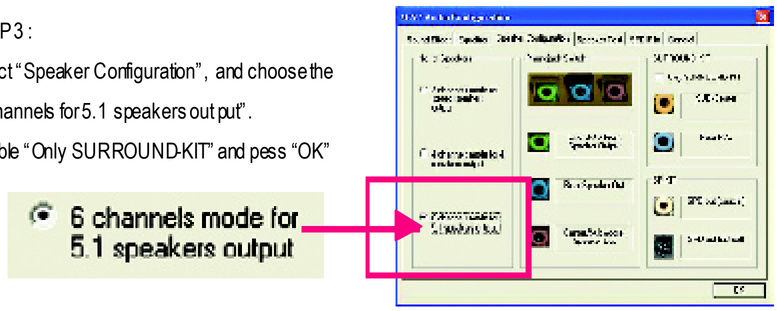
After installation of the audio driver, you 'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.



STEP 3 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers output".

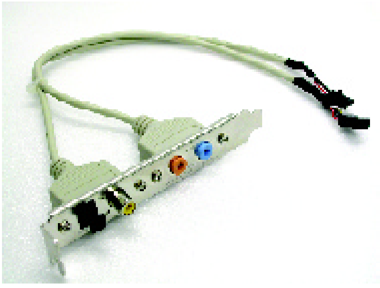
Disable "Only SURROUND-KIT" and press "OK"



English

Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit,Optional Device):

(Audio Combo Kit provides SPDIF output port : optical & coaxis and SURROUND-KIT : Rear R/L & Center/subwoofer)



SURROUND-KIT access analog output to rear channels and Center/Subwoofer channels. It is the best solution if you need 6 channel output, Line In and MIC at the same time. "SURROUND-KIT" is included in the GIGABYTE unique "Audio Combo Kit" as picture.

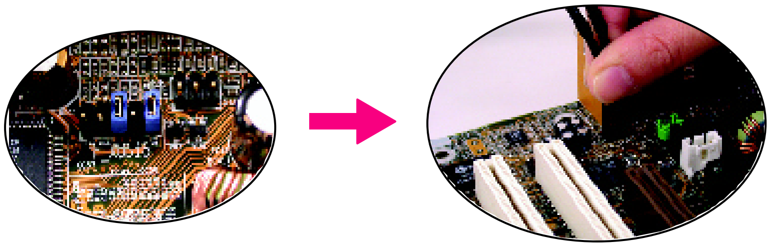


STEP1 :

Insert the "Audio Combo Kit" in the back of the case , and fix it with the screw .

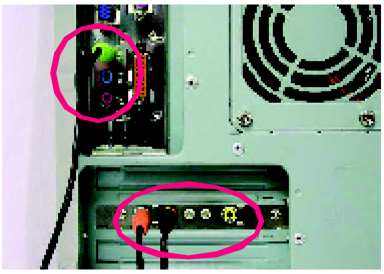
STEP2 :

Connect the "SURROUND-KIT" to SUR_CEN on the M/B.



STEP3 :

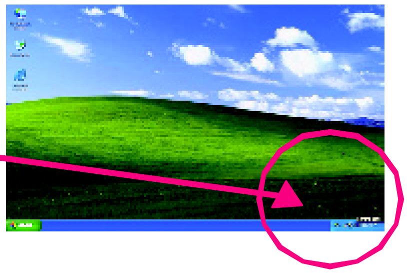
Connect the front channels to back audio panel's "Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER.



STEP4 :

Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

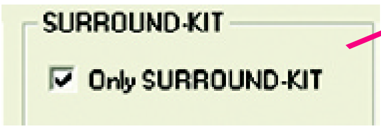


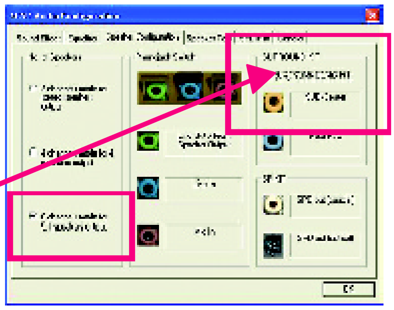


STEP5 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers output".

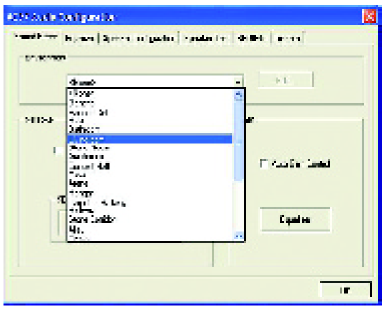
Enable "Only SURROUND-KIT" and press "OK".





Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

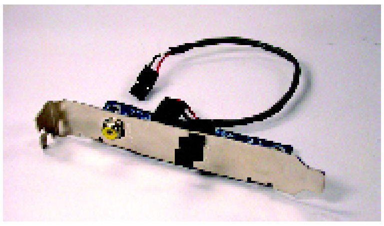
When the "Environment settings" is "None", the sound would be performed as stereo mode(2 channels output). Please select the other settings for 6 channels output.



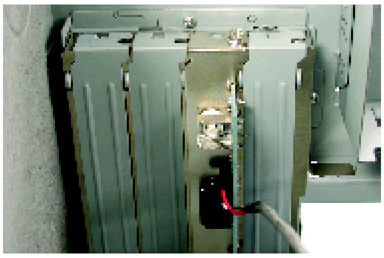
English

SPDIF Output Device (Optional Device)

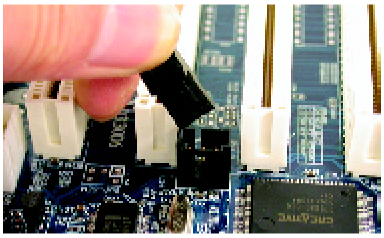
A "SPDIF output" device is available on the motherboard. Cable with rear bracket is provided and could link to the "SPDIF output" connector (As picture.) For the further linkage to decoder, rear bracket provides coaxial cable and Fiber connecting port.



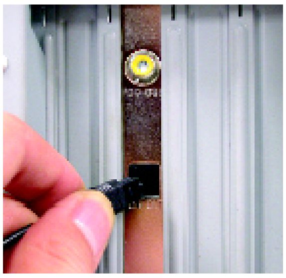
1. Connect the SPDIF output device to the rear bracket of PC, and fix it with screw.



2. Connect SPDIF wire to the motherboard.



3. Connect co-axial or optical output to the SPDIF decoder.



English

English

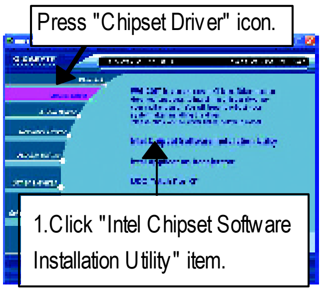
Chapter 5 Appendix

Picture below are shown in Windows XP (CD driver ver 1.0)

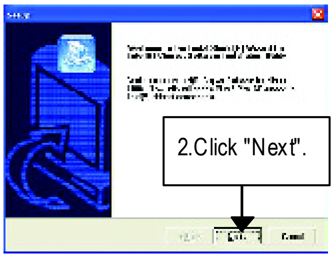
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

Appendix A: Chipset Driver Installation

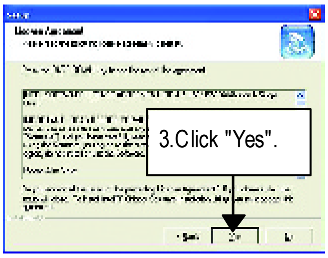
A-1: Intel Chipset Software Installation Utility



(1)



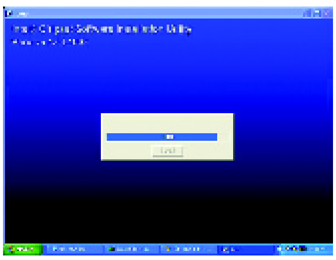
(2)



(3)



(4)



(5)

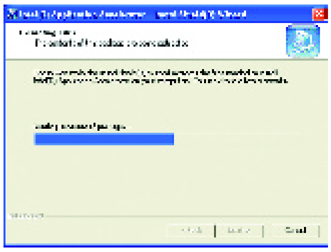


(6)

A-2: Intel Application Accelerator Installation



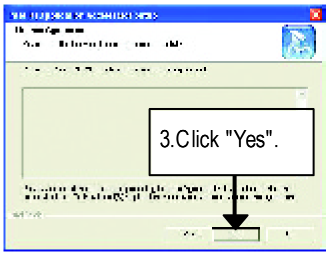
(1)



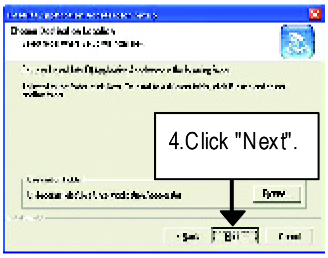
(2)



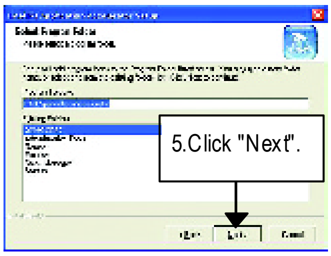
(3)



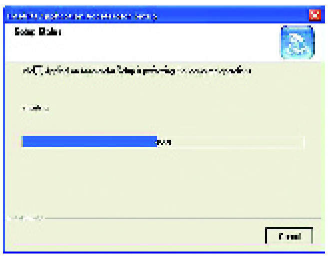
(4)



(5)



(6)



(7)



(8)

A-3. USB Patch Driver For XP

Enable S3 for USB Device Setup is preparing the InstallShield(R) Wizard which will guide you through the setup process.

Appendix B: RealTek AC'97 Audio Driver Installation

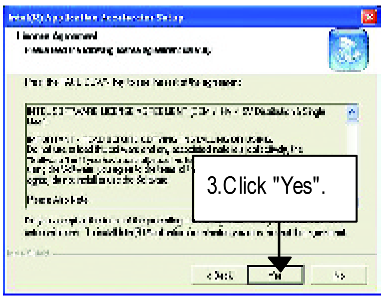
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.



(1)



(2)



(3)

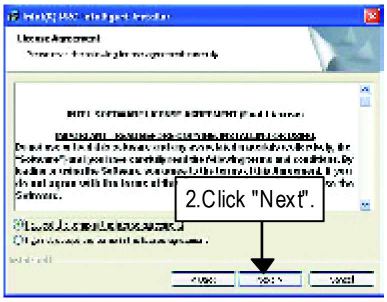


(4)

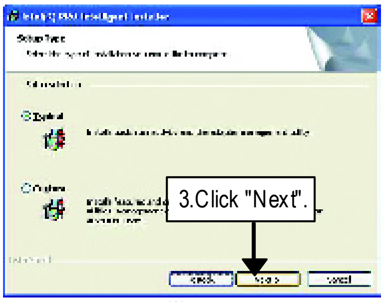
Appendix C: Intel Network Driver Installation (*)



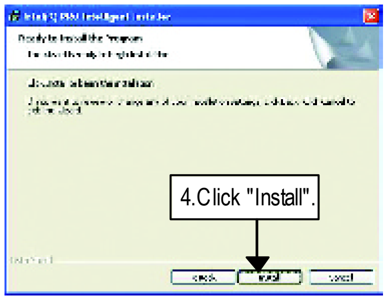
(1)



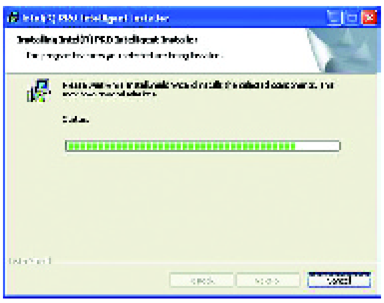
(2)



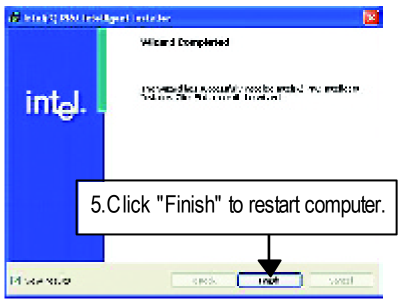
(3)



(4)



(5)



(6)

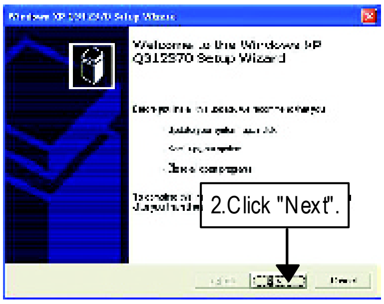
(*) For GA-8PEMT4 only

Appendix D: USB 2.0 Driver Installation

D-1: MS USB 2.0 Driver Patch For XP



(1)



(2)



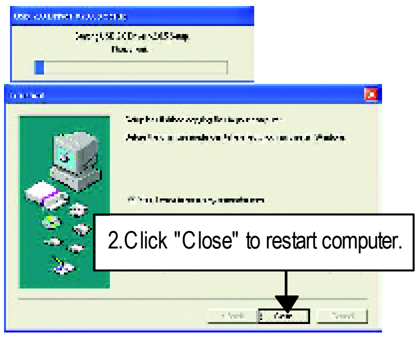
(3)



(4)

D-2: USB 2.0 Driver For ICH4





If there is any problem occurred during USB2.0 device installing, using or upgrading. Please visit Microsoft or GIGABYTE website for downloading the latest drivers.

Appendix E: EasyTune 4 Installation

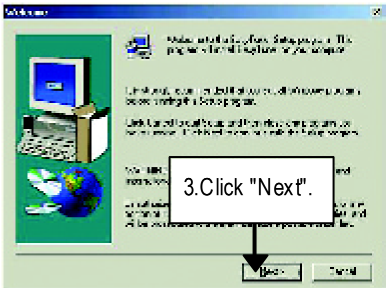
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.



(1)



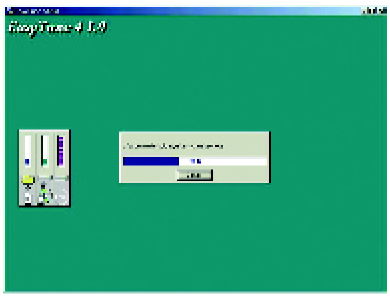
(2)



(3)



(4)



(5)



(6)

English

Appendix F: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network

to be continued......

English

Acronyms	Meaning
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Interface Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID

English

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:		PCB revision:
BIOS version:	O.S./A.S.:	

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description:

English

English

English

English

English

English

English